SHRI KRISHNA ACADEMY

NEET,JEE & BOARD EXAM(10th,+1,+2) COACHING CENTRE

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FIRST MID TERM TEST - JUL- 2019

X - SCIENCE

ANSWER KEY

MARKS : 50

Q.NO	SECTION – A	MARKS
I. Answer all the questions below:		**15x1=15**
1.	c) mass of the object	1
2.	d) both a & c	1
3.	b) 2f	1
4.	c) -0.25m	1
5.	c) Carbondioxide	1
6.	d) 14g	1
7.	d) 7,18	1
8.	a) He	1
9.	b) Stem	1
10.	b) Ethyl alcohol	1
11	b) 33 segments	1
12	b) Viviparous	1
13	d) All the above	1
14	a) SA node	1
15	a) Medulla oblongata	1
II. Answer any Ten questions	**SECTION-B**	**10x2=20**
16	F_1 = 5N F_2 = 15 $F_{net} = F_2 - F_1$(Since $F_2 > F_1$) F_{net} =15 - 5 Resultant force = 10N 1. The resultant force will be oin the direction of force with greater magnitude. 2. The direction of action of the resultant force will be in the direction of the greater force (15N). 3. The direction will be along 15N.	**1** **1**
17	i) Negative, Positive ii) 980N	**1** **1**

18 **Difference between Convex lens and Concave lens:** — ½ ½ ½ ½

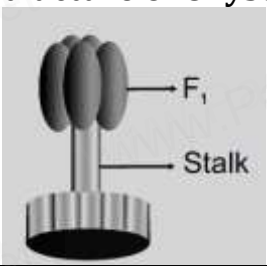
S. N	Convex Lens	Concave Lens
1	A convex lens is thicker in the middle than at edges.	A concave lens is thinner in the middle than at edges.
2	It is a converging lens.	It is a diverging lens.
3	It produces mostly real images.	It produces virtual images.
4	It is used to treat hypermeteropia.	It is used to treat myopia.

19 iii) A is wrong R is correct — **2**

20 When iron is exposed to moist air, it forms a layer of brown hydrated ferric oxide on its surface. This compound is known as rust and the phenomenon of formation of rust is known as **rusting**. — 1

$4\ Fe + 3\ O_2 + x\ H_2O \rightarrow 2\ Fe_2O_3 . xH_2O$(rust) — 1

21 **Structure of Oxysomes:**



1 **1**

22 i) Leech

ii) Dental formula = $\left(I\frac{2}{1}, C\frac{0}{0}, PM.\frac{3}{2}, M\frac{3}{3}\right)$ in rabbit which written as $\frac{2033}{1023}$ — 2

23 **Parasite adaptations in leech:**

- Blood is sucked by pharynx.
- Anterior and posterior ends of the body are provided with suckers by which the animal attaches itself to the body of the host. — **1**
- The three jaws inside the mouth, causes a painless Y-shaped wound in the skin of the host.
- The salivary glands produce hirudin which does not allow the blood to coagulate. Thus, a continuous supply of the blood is maintained. — **1**
- Parapodia and setae are completely absent
- Blood is stored in the crop. It gives nourishment to the leech for several months. Due to this reason there is no elaborate secretion of the digestive juices and enzymes

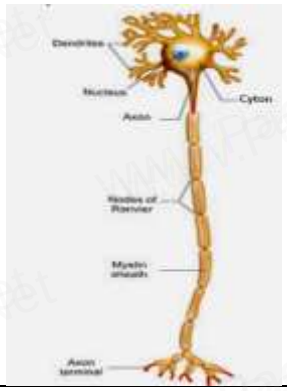
24 1) Symptastic - Plasmodesmata
2) Transpiration - Leaf
3) Osmosis - Pressure in xylem
4) Root pressure - Pressure gradient — 2

25 **Cohesion:**
The force of attraction between molecules of water is called cohesion. — **2**

26 **Differentiate between Voluntary and involuntary actions:** — 1 1

S.N	Voluntary actions	Involuntary actions
1	Voluntary actions are initiated by our own conscious	A reflex action is not under the control of our conscious
2	Cerebral cortex, cerebellum controls voluntary functions	Hypothalamus controls involuntary functions

27 **Structure of Neuron:**



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SECTION - C 3x5=15

III. Answer any Three questions

PART - A

28 **Difference between Myopia and Hypermetropia:**

	Myopia	Hypermetropia	
1	Myopia, also known as short sightedness, occurs due to the lengthening of eye ball.	Hypermeteropia, also known as long sightedness, occurs due to the shortening of eye ball.	**1**
2	With this defect, nearby objects can be seen clearly but distant objects cannot be seen clearly.	distant objects can be seen clearly but nearby objects cannot be seen clearly.	**1**
3	The focal length of eye lens is reduced or the distance between eye lens and retina increases.	The focal length of eye lens is increased or the distance between eye lens and retina decreases.	**1**
4	Due to this, the image of distant objects are formed before the retina	Due to this, the image of nearby objects are formed behind the retina	**1**
5	This defect can be corrected using a concave lens . The focal length of the concave lens to be used	This defect can be corrected using a convex lens . The focal length of the convex lens to be used is computed	**1**

29 **Salient Features of Modern atomic Theory:**

- ♣ **An atom is no longer indivisible** (after the discovery of the electron, proton, and neutron).
- ♣ Atoms of the same element may have different atomic mass. (discovery of **isotopes** $_{17}Cl^{35}$, $_{17}Cl^{37}$).
- ♣ Atoms of different elements may have same atomic masses (discovery of **Isobars** $_{18}Ar^{40}$, $_{20}Ca^{40}$).
- ♣ Atoms of one element can be transmuted into atoms of other elements. In other words, atom is no longer indestructible (discovery of **artificial transmutation**).
- ♣ Atoms may not always combine in a simple whole number ratio (E.g. Glucose $C_6H_{12}O_6$ C:H:O = 6:12:6 or 1:2:1 and Sucrose $C_{12}H_{22}O_{11}$ C:H:O = 12:22:11).
- ♣ Atom is the **smallest particle that takes part in a chemical reaction.**
- ♣ The mass of an atom can be converted into energy ($E = mc^2$).

5

30	a) Ionic bond b) electronegativity c) Along the period, from left to right in the periodic table, the electronegativity increases because of the increase in the nuclear charge which in turn attracts the electrons more strongly. On moving down a group, the electronegativity of the elements decreases because of the increased number of energy levels.	1 1 3
31	**Stages of Cellular Respiration:** **a. Glycolysis** (Glucose splitting): ◆It is the breakdown of one molecule of glucose (6 carbon) into two molecules of pyruvic acid (3 carbon). ◆Glycolysis takes place in cytoplasm of the cell. ◆It is the first step of both aerobic and anerobic respiration. **b. Krebs Cycle:** ◆This cycle occurs in mitochondria matrix. ◆At the end of glycolysis, 2 molecules of pyruvic acid enter into mitochondria. ◆The oxidation of pyruvic acid into CO_2 and water takes place through this cycle. It is also called **Tricarboxylic Acid Cycle** (TCA). **c. Electron Transport Chain:** ◆This is accomplished through a system of electron carrier complex called **electron transport chain** (ETC) located on the inner membrane of the mitochondria. ◆$NADH_2$ and $FADH_2$ molecules formed during glycolysis and Krebs cycle are oxidised to NAD+ and FAD+ to release the energy via electrons. ◆The electrons, as they move through the system, release energy which is trapped by ADP to synthesize ATP. ◆This is called **oxidative phosphorylation**. In this process, O_2 the ultimate acceptor of electrons gets reduced to water. $C_6H_{12}O_6+6O_2 \rightarrow 6CO_2+6H_2O+ATP$	5
32	**Functions of blood:** ❖ Transport of respiratory gases (Oxygen and CO_2). ❖ Transport of digested food materials to the different body cells. ❖ Transport of hormones. ❖ Transport of nitrogenous excretory products like ammonia, urea and uric acid. ❖ It is involved in protection of the body and defense against diseases. ❖ It acts as buffer and also helps in regulation of pH and body temperature. ❖ It maintains proper water balance in the body.	5